



Marked Up Version of Substitute Specification  
Attorney Docket No. 3036/49686

## ACOUSTICALLY ACTIVATED MARKETING DEVICE

This application claims the priority of British patent documents 9907626.7, filed April 6, 1999 and 9828101.7, filed December 21, 1998 (PCT No.: PCT/GB99/04354), the disclosures of which are expressly incorporated by reference herein.

The present invention relates to an acoustically activated marketing device.

The consumer obtains the device from a retailer, and. He/she wears the device as a badge while at the cinema or while listening to the radio or TV. When a specific advert is broadcast the badge interprets part of the sound track and activates the display on the badge.

According to the present invention there is provided the apparatus for displaying information, said apparatus including includes a display means and an activation means. The said activation means being is coupled to said the display means such that upon reception of predefined data, the said activation means causes said the display means to display predefined information. Said The predefined data may be transmitted by an acoustic signal, which. Said acoustic signal may be digitally modulated.

According to a further aspect of the present invention said predefined data is broadcast by a commercial broadcasting means, which. Said commercial broadcasting means may be a television broadcasting means. Alternatively, said commercial broadcasting means may be a radio broadcasting means.

According to yet a further aspect of the present invention, said the apparatus further includes programming means for programming said the predetermined data and said the predefined information. Said The display means may be a liquid crystal display, and the. Said activation means may be an application specific integrated circuit.

Said The apparatus further include includes a microphone means, an analogue to digital interface means, a programmable digital processor and a battery, which. Said battery may be a button cell type battery.

According to an aspect of the present invention, said the predefined information may be an advertisement, or. Alternatively, said predefined information may be a message.

According to a further aspect of the present invention, there is provided a method for displaying information, said method including the steps of: receiving data, comparing said the received data with predefined data, and upon said when the received data matching said matches the predefined data, displaying predefined information.

According to a further aspect of the present invention said the data [[is]] may be transmitted by an acoustic signal, which may be. Said acoustic said maybe digitally modulated.

According to yet a further method aspect, said the acoustic signal is part of a commercial television or radio broadcast. Said commercial broadcast may be a television broadcast. Alternatively, said commercial broadcast may be a radio broadcast.

## BRIEF DESCRIPTION OF THE DRAWINGS

While the principle advantages and features of the invention have been described above, a greater understanding and appreciation of the invention may be obtained by referring to the drawings and detailed description of the preferred embodiment, presented by way of example only, in which;

Figure 1 shows the display means of an acoustically activated marketing device according to one aspect of the present invention; and [[,]]

Figure 2 shows the electronic layout of an acoustically activated marketing device according to one aspect of the present invention.

## DETAILED DESCRIPTION OF THE DRAWINGS

In Figure 1 an acoustically activated marketing device (10) is shown comprising a low-cost display (12). The display (12) may be a liquid crystal display. The device (10) operates such that upon reception of predefined data, the display (12) displays predefined information. This information may be an advertisement such as a cocktail glass (14) or a message indicating that a prize has been won.

The device can be configured such that different data triggers different messages. For example, data X may trigger a message that indicates a prize has been won, while data Y may trigger a message that indicates that no prize has been won.

Alternatively, different badges can be configured to respond differently to the same data. For example, upon reception of the same data, one badge may indicate that a prize had been won, while another badge may not.

In Figure 2 the electronics layout (20) of an acoustically activated marketing device (10) is shown. In this aspect of the present invention the electronics layout

includes a microphone element (22) connected to an A/D interface (24). The microphone elements operate to detect a predefined acoustic signal. The device (10) further includes a programmable digital processor (26) which allows for a variety of acoustic signals and corresponding display information to be programmed into the device. Thus a single device can be mass-produced and then programmed in the factory to satisfy a variety of different customer's needs.

The device (10) further comprises a battery source (28). In this embodiment of the present invention the battery source is a button type battery.

As will be appreciated, when the predefined information is displayed the consumer may be in an area of high noise, for example; in the midst of conversation in a cinema or at home, or when driving in a car. This noise may mask the predefined data and prevent the display means from being activated. Ideally, this should not be greater than 1 non-activation out of 10 or 20 occasions.

As will be appreciated, while the consumer is wearing the badge, it will be subject to many different sources of noise, for example; conversation, music and car noise. These could, by chance, contain a sequence of sounds that are sufficiently like the predefined signal to trigger the device. The probability of this type of 'false alarm' occurring can be reduced by increasing the complexity of the predefined data, but this may be at the expense of battery life or badge cost. Ideally, less than 1 in 100 badges should be unintentionally activated during their lifetimes.

The required operating lifetime of the badge is expected to be application-dependent. Long operating lifetimes will require higher cost batteries or lower power circuits.

To minimise the production cost, an application specific integrated circuit (ASIC) can be developed. To reduce packaging costs the ASIC can be directly mounted on the printed circuit board and then protected from the atmosphere by a layer of plastic. For this type of ASIC to be viable, large production runs will be necessary. The requirement for such runs will make it more difficult to adapt the ASIC to a different application. Some degree of programmability may be possible, however this may require the use of a more expensive production process.

~~As will be appreciated by those skilled in the art, various modifications may be made to the embodiment hereinbefore described without departing from the scope of the present invention.~~

The foregoing disclosure has been set forth merely to illustrate the invention and is not intended to be limiting. Since modifications of the disclosed embodiments incorporating the spirit and substance of the invention may occur to persons skilled in the art, the invention should be construed to include everything within the scope of the appended claims and equivalents thereof.